INTERIM REPORT ON
INFORMATION MANAGEMENT
FOR LONG-TERM STEWARDSHIP
State & Tribal Government Working Group
Long-Term Stewardship Committee
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Introduction

Many studies, reports and discussions on long-term stewardship for Department of Energy nuclear sites where contamination will be left cite information management as an important concern. Many individuals and organizations will need several kinds of information about the sites for a variety of purposes over a long time period. The State & Tribal Government Working Group (STGWG) Long-Term Stewardship Committee identified this as one area in which states and tribes might provide concrete recommendations to the Department of Energy.

The committee developed a questionnaire and circulated it to state and tribal members of STGWG in order to determine the scope of potential state and tribal information needs. The questionnaire asked respondents to identify and rank in importance: types of information needed, potential users of the information, and purposes for which the information would be needed. Five state and four tribal members of STGWG responded. The questionnaire and its results are tabulated in Appendix A.

The Committee intends to follow up on how the information is now gathered, managed and made accessible, and how this can be accomplished in the long term. As a next step, committee members were asked to review a draft survey asking precisely what information is now kept and how. Only two state members responded, but it quickly became evident that presently there are not well-thought-out information management systems for sites where contamination is left, requiring long-term stewardship. The systems in place do not necessarily provide for long-term maintenance; nor are they categorized in such a way as to meet the most commonly expressed needs from the first survey. The Committee will focus on these gaps in the coming months.

Scope of information needed

In initial discussions and based on the current literature, the committee identified the following as the most likely kinds of information needed for long-term stewardship:

- Contaminants present:
    - A detailed description of activities known to have taken place on the site;
    - Suspected and confirmed releases;
    - Whatever is known of fate and transport, from sampling, characterization and/or modeling, including precise location and areal extent; and
    - Inventories and precise location of land-disposed wastes.

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- Physical remedial actions:
    - Treatment or stabilization of wastes or contamination in place;
    - Construction of surface or subsurface barriers;
    - Leachate or groundwater collection or interception systems; and
    - In situ monitoring systems.
- Institutional controls:
    - Land use restrictions, including easements, deed restrictions, legislative restrictions;
    - Access restrictions, including notification (signs and fences), active controlled entry and/or surveillance and deterrent measures;
    - Processes for implementing and monitoring controls; and
    - The institutional and legal framework within which institutional controls were specified.
- Accountability:
    - Who conducted physical activities;
    - Who is in "first position" to remediate further if these activities fail to be protective;
    - Who has responsibility for maintenance and monitoring physical systems;
    - Who has responsibility for maintenance and monitoring of institutional controls; and
    - Who has responsibility for maintenance and monitoring of data and information.

Survey respondents added the following to the list:
- Pre-closure environmental monitoring data – locations of abandoned bore holes and monitoring wells.
- Specifically, how LTS activities will be funded.
- Updated, post-closure monitoring information.
- Funding information—how will the funds be provided, and from where will the money come? How do states and Tribes have input into the process?
- Accident analysis—need an analysis of possible accidental releases, their probabilities, potential release magnitudes, etc. We need to have emergency plans in place.
- Design performance data on any in-field control systems or equipment—what is normal, what is not, potential failure modes and consequences. Also need aging information such as design lifetime, and plans for replacement and maintenance.
- Research local and regional instances of institutional control failure and incorporate corrections into the site plan.

When asked to list the three most important of these, respondents collectively listed these as the most important:

- Location & Inventory of contamination & wastes (7)
- Physical controls (4)
- Institutional controls (3)
- Accountability (3)

Purposes for which the information may be needed

The committee believed that the purposes for which information may be needed will have a bearing on what should be retained and/or updated, and how information would be accessed. The purposes suggested in current literature and experience included these:

- Make sure the remedy is working—i.e. that it is protective of public health and the environment within the parameters established in a Record of Decision or equivalent decision document.
- Take appropriate action if the remedy isn't working—e.g. rebuild failing physical structures, add barriers, enforce use restrictions, etc.
- Be prepared for potential release of contamination in case of emergency, e.g. range fire, flood, earthquake, vandalism.
- Periodic review in light of new technologies that might allow further remediation and reduce or eliminate the need for long-term stewardship activities.
- Document cultural and historic uses, activities, artifacts at the site.
- Provide the means to assure accountability of the responsible parties.

Respondents added the following purposes to the list:

- Assessment of human health and ecological impacts.
- Natural resource damage assessment.
- Ongoing public education and information on the types of controls in place, the hazards, possible emergencies and appropriate responses.
- To allow expedited response actions if LTS activities or remedial actions prove ineffective.
- Performance assessment.

Respondents identified the following as the most important purposes:

- Confirm effectiveness of remedy (4)
- Correct, compensate for failure (4)
- Enforce Accountability for monitoring, maintenance, etc (4)
- Emergency planning & response (3)

Potential users of the information

The committee identified the following potential users for this information:

- Liable parties (those who are allowed to leave contamination in place);
- Land holders ("stewards"—those who are responsible for whatever happens in the present on the land);
- Federal environmental regulators;
- State environmental regulators;

- Local governments (either for regulatory or other public purposes);
- Tribal governments;
- Emergency planning and response agencies;
- Individuals who may be affected by release of contamination—adjacent residents, down-stream and downwind publics, community organizations;
- Scientists who are advancing technology to clean up, treat, or contain contamination; and
- Historians and those charged with or motivated by cultural preservation.

Respondents proposed these additions:

- Land users. Stewards may host third-party land users- recreational, limited commercial.
- Regional or state governments should be added and should have the same access as the state regulator.

Respondents indicated a wide range of users should have access to the information. The number of mentions for each potential user were:

Liable party	1	State regulator	3	Affected public, adjacent residents	3	Natural Resources Program	1
Land holder	2	Local government	3	Scientists developing technology to clean up, treat, or contain contamination	2	Cultural Resources Program	1
Any potential end user	--	Tribal government	2	Stewards	1	Historians and cultural preservers	--
Federal regulator	1	State, local, tribal emergency response	3				

How is this information to be maintained and made available to the variety of users?

Those who responded to this survey and to the draft survey asking what specific information is presently kept identified the following key issues:

Administrative records. Information about contamination in place and remedies is maintained through Administrative Records pursuant to CERCLA and similar laws. However, this information is not always readily accessible or understandable. It is not necessarily organized in a way to meet specific purposes as outlined above. Nor are record retention requirements aligned with long-term needs. There is much reliance on CERCLA five-year reviews as the principal mechanism for checking and updating information.

State regulators have not focused on long-term information needs. State regulators appear not to have given much thought to long-term information management systems, but are also frustrated by their inability to extract relevant information out of DOE-maintained records *in the near term.*

As the committee further examines information systems in place and how they might be improved, it will be guided by the comments from respondents to the first survey's question about "how" information should be maintained. Key suggestions include:

User-friendly indexing. A simple (user friendly) indexing procedure should be established that is maintained by a responsible program that can be held accountable.

Balance of national and local elements. Local and national systems could serve local and national uses and be mutually reinforcing. A national electronic system could be periodically updated from locally maintained electronic and hard-copy files.

Key role of local governmental units and citizens. The key components of perpetuating the information over the long term will be the local people and local government (e.g. realtors, county planners, game wardens, neighbors.). The state or tribal regulators who are charged with conducting the inspections, updating the permits and licenses, etc. typically don't live at or near the site and won't be as available to inform others about it.

Wide dissemination of information. There should be a wide dissemination of information to maximize the number of people handing down or receiving the information over the years, thus perpetuating an "institutional memory." A wide dissemination would increase the probability that the site is remembered and considered.

Accessibility and visibility of information are important. The LTS information should be readily accessible so it is easily perpetuated over the years.
- A site that has entered LTS should be visible. It should stand out from surrounding features so as to compel people to find out or stay informed about it. A visible site is less likely to be forgotten.
- Both summary and detailed information should be readily available
- The information should be available in several formats such as electronic and hard copy.
- A feedback mechanism and process should be provided to allow public input on the information.